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Marc Meyers Brings Acta Materialia Award Home to Brazil

By Lynne Robinson

Posted on: 10/7/2009 12:00:00 AM... The breadth of materials science unfolded at Marc Meyers' doorstep as a boy growing up in the industrial town of Monlevade, Brazil. His childhood home stood in the shadow of the first integrated steel mill built in Latin America, where his father, Henri, worked as rolling mills engineer and eventually as the plant director. Materials secrets from nature were also revealed during explorations of the neighboring jungle, most memorably in the form of a toucan skeleton. "I lifted its beak and recognized, right then, that it was extraordinarily light and stiff," recalled Meyers. "But, it took me half a lifetime to return to it."



Meyers' earliest forays into understanding the materials world around him sometimes gave rise to unintended consequences. Sneaking into his father's steelworks at the age of seven resulted in a "severe reprimand." And, an attempt to detonate an explosives cap that he "found" at the age of 13 nearly blinded him. "I always liked to explore new areas, understand new phenomena," he said.

It was in the relative safety of university study that Meyers finally set on a path that would define his research for more than 37 years—the dynamic behavior of materials, encompassing dynamic processing, deformation, and fracture. Through the years, he has

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also explored extractive metallurgy, processing, and physical metallurgy. Still inspired by that discarded toucan beak he found in the jungle, Meyers has most recently expanded his research to biological materials, as well as ultrafine grained and nanocrystalline metals.



Meyers gives a classroom demonstration on biological materials. (Click to enlarge photo.)

Weaving these divergent interests together has been a desire to “build bridges between researchers and society globally.” For Meyers, currently Professor of Materials Science, University of California, San Diego, this has meant spearheading the implementation of numerous forums and joint research initiatives that have enabled scientists from different disciplines and parts of the world to share knowledge and progress together. It is for these efforts, as well as his many scientific accomplishments, that earned Meyers the 2010 *Acta Materialia* Materials and Society Award. This prestigious honor recognizes outstanding contributions to understanding the relations between materials technology and society, and/or contributions to materials technology that have had a major impact on society.

“I believe that there are two extremes in our approach to knowledge—backyard science and global science,” said Meyers. “In our age, we can no longer lock ourselves up into hermetic physical and disciplinary units. It behooves us to reach out, seek collaborations, build bridges. The age of hierarchic academic empires is gone. To put it simply, we cannot afford them any longer. Equipment is ever more sophisticated, computational methods ever more advanced. Groups are replacing individuals and solitary efforts are giving way to interactions. This in no way hinders individual freedom and initiative. On the contrary, it enriches science.”

Meyers’ latest efforts to enrich science through international cooperation have focused on the development of the inaugural International Materials Congress, to be held jointly by TMS and the Brazilian Metallurgical, Materials and Mining Association (ABM), July 26-30, 2010, in Rio de Janeiro, Brazil, in conjunction with the 2010 ABM Annual Congress. “Professor Meyers was the man responsible in 2008 for the articulation between TMS and ABM for a first joint conference,” said Sergio Neves Monteiro, professor, Laboratory for Advanced Materials at the State University of Northern Rio de Janeiro, coordinator of the 2010 ABM Annual Congress, and both a TMS and ABM member. “As an active and respected member of both societies, he perceived the need to establish an effective TMS/ABM

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connection that would stand as an example for the ever-growing United States/Brazilian partnership in the 3M's—metallurgy, materials and minerals—sectors of common interest for both societies.”

From those initial discussions, the TMS-ABM International Materials Congress was born. It now serves as a critical element of the Memorandum of Understanding to support the development of cooperative activities that was signed by ABM and TMS at the TMS 2009 Annual Meeting.

“TMS is a global society, and working with our counterpart societies in other parts of the world is an important part of our strategic plan,” said Warren H. Hunt, TMS executive director. “One of our strategic thrusts is the Alliance of the Americas, an initiative to develop collaborations with organizations sharing our interests in North and South America. In Canada, we are working with MetSoc and in South America, we have formalized a relationship with ABM, based primarily on the interest already expressed for the joint congress.”

Appointed as the international coordinator for the TMS-ABM Congress, Meyers said that response to the event has been extremely positive. “The possibilities for interaction are immense,” said Meyers. “We have been able to assemble an outstanding group of both TMS and ABM members for the technical symposia and they are donating their time in a most generous way.” The conference focuses on a broad range of contemporary issues in materials science and engineering, with seven planned symposia: Characterization and Application of Biomaterials, Dynamic Behavior of Materials, Composite Materials, Light Weight Materials for Transportation, Materials and Society, Mechanical Properties of Materials with Emphasis on Grain-Size Effects, and Computational Modeling and Advanced Characterization.

On a number of levels, Meyers' connection with the TMS-ABM Congress is emotional, as well as professional. His father was one of ABM's founding members in 1945. And, he has chosen to receive his *Acta Materialia* Materials and Society Award at the event. He also plans to use the award honorarium to help establish a scholarship for underprivileged materials science students from his home town of Monlevade.

“I chose to receive the *Acta* Award at this congress because I am a member of the first wave of Brazilians who came to the United States to do doctoral studies in materials science,” he said. “We were just a handful, preceded by the brilliant pioneers Luis Correia da Silva and Walther Arno Mannheimer.

"I would like to share this recognition with my generation, who left the provincial universities in which they studied to reach for the world."

Abstracts for the 2010 TMS-ABM International Materials Congress are being accepted through November 30. For more information or to submit an abstract, go to the [meeting Web site](#). To view a video on Marc Meyer's current research into biological materials, visit the [Science Nation Web site](#).

Lynne Robinson is a news and feature writer for Materials Technology@TMS.

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